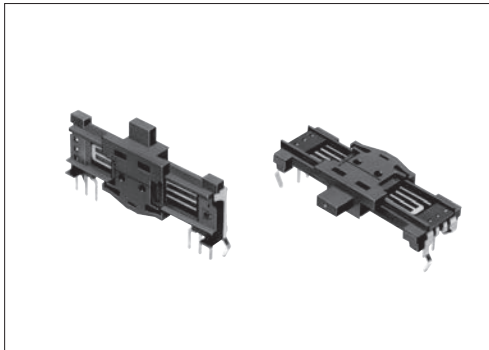


Compact total length of travel +15mm and improved operating feel



■ Typical Specifications



| Items | Specifications |
|-----------------------------|---------------------------------------|
| Total resistance tolerance | ±20% |
| Maximum operating voltage | Please see P.414 |
| Operating force | 0.6 ^{+0.5} _{-0.4} N |
| Operating life | 10,000 cycles |
| Operating temperature range | -25°C to +70°C |

■ Product Line

| Number of resistor elements | Direction of lever | Travel (mm) | Lever types | Length of lever (L1) (mm) | Total resistance (kΩ) | Resistance taper | Center detent | Tap | Minimum order unit (pcs.) | | Products No. | Drawing No. | | |
|-----------------------------|--------------------|--------------|-------------|---------------------------|-----------------------|------------------|---------------|---------|---------------------------|--------------|--------------|-------------|---------|--------------|
| | | | | | | | | | Japan | Export | | | | |
| Single-unit | Vertical | 15 | C | 9.5 | 100 | 1B | With | Without | 2,900 | 5,800 | RS15H113CA05 | 1 | | |
| | | | | | 50 | | Without | | | | RS15H111CA04 | | | |
| | | | | | 100 | | With | | | | RS15H113C001 | | | |
| | | 20 | | 50 | Without | | RS20H113C008 | | 2 | | | | | |
| | | | | 100 | With | | RS20H111C009 | | | | | | | |
| | | | | 15A | Without | | RS30H111A00D | | | | | | | |
| | Horizontal | 15 | 4.5 | A | 100 | 1B | Without | | 2,750 | 5,500 | RS15H11AA04M | 7 | | |
| | | | | | 10 | 15A | Without | | | | RS15H11AA008 | | | |
| | | | | | 250 | 1B | Without | | | | RS15H11AA00G | | | |
| | | 20 | | | 10 | 1B | With | | 2,750 | 5,500 | RS20H11AA02T | 8 | | |
| | | | | | 5 | Without | RS20H11CA00B | | | | | | | |
| | | | | | 50 | Without | RS20H11AA01U | | | | | | | |
| 30 | 10 | 1B | A | 10 | 1B | Without | 1,980 | 3,960 | RS20H11AA015 | 9 | | | | |
| | | | | 50 | Without | RS30H11AA009 | | | | | | | | |
| | | | | 200 | Without | RS30H11AA00G | | | | | | | | |
| | 9.5 | 4.5 | | 10 | 15A | 5 | Without | Without | Without | RS30H11AAA0B | 9 | | | |
| | | | | | | 10 | Without | Without | RS30H11AA00P | | | | | |
| | | | | | | 10 | Without | Without | RS30H11AAA02 | | | | | |
| Dual-unit | Vertical | 15 | A | 4.5 | 10 | 15A | Without | 2,900 | 5,800 | RS15H121A009 | 4 | | | |
| | | 20 | | 9.5 | 100 | 1B | With | 2,500 | 5,000 | RS20H123A01C | 5 | | | |
| | | 30 | | 10 | 100 | 1B | Without | 2,000 | 4,000 | RS30H121A00B | 6 | | | |
| | Horizontal | 15 | | 4.5 | 10 | 1B | Without | 2,750 | 5,500 | RS15H12AA00F | 10 | | | |
| | | 20 | | C | 14.5 | 250 | 3B | | | Without | | Without | Without | RS15H12AA009 |
| | | 30 | | A | 4.5 | 50 | 15A | | | Without | | Without | Without | RS20H12AC002 |
| 1,980 | 3,960 | RS30H12AA003 | 12 | | | | | | | | | | | |

Note

Other varieties are also available. Refer to "Other Specifications" (P.414).

Refer to P.414 for other specifications.
 Refer to P.414 for details of lever types.
 Refer to P.415 for ordering products not listed.
 Refer to P.438 for soldering conditions.

■ Packing Specifications

Tray

| Travel (mm) | Direction of lever | Number of packages (pcs.) | | Export package measurements (mm) |
|-------------|--------------------|---------------------------|------------------------|----------------------------------|
| | | 1 case /Japan | 1 case /export packing | |
| 15 | Vertical | 2,900 | 5,800 | 378×514×512 |
| | Horizontal | 2,750 | 5,500 | 374×508×408 |
| 20 | Vertical | 2,500 | 5,000 | 378×514×512 |
| | Horizontal | 2,750 | 5,500 | 374×508×408 |
| 30 | Vertical | 2,000 | 4,000 | 378×514×512 |
| | Horizontal | 1,980 | 3,960 | 374×508×408 |

■ Dimensions

Unit:mm

| No. | Style | PC board mounting hole dimensions (Viewed from mounting side) |
|-----|-------|--|
| 1 | | |
| 2 | | |
| 3 | | |

The length of Lever (L₁) can be customized. Refer to P.414 for details.

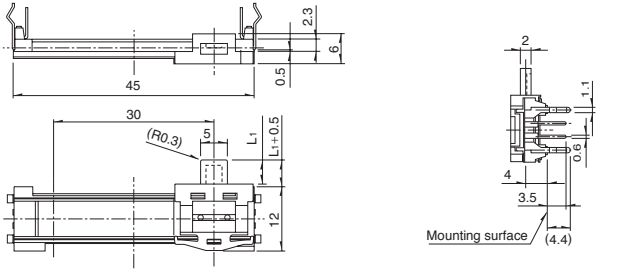
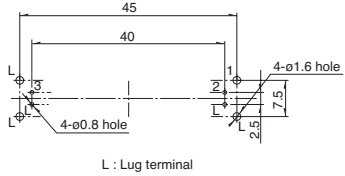
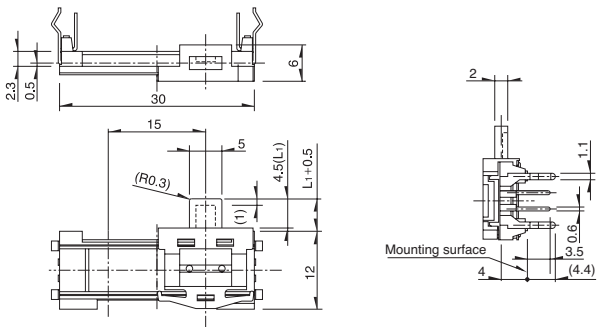
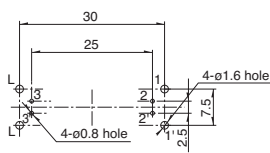
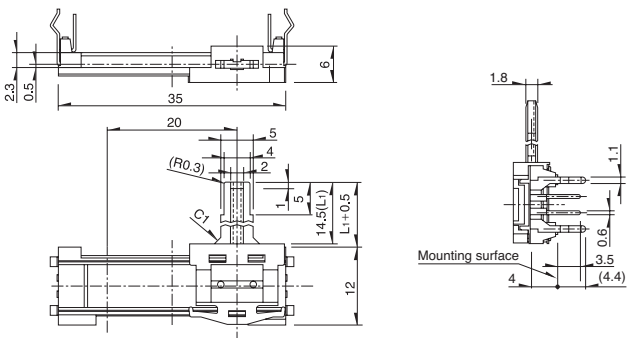
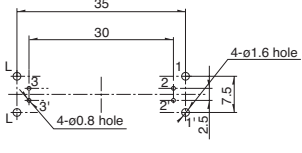
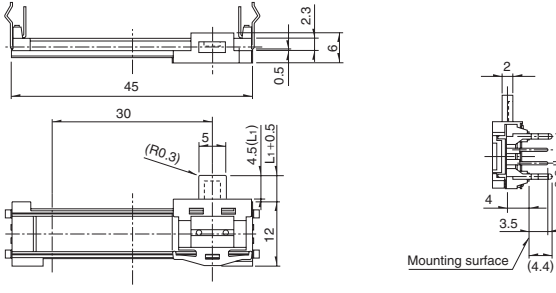
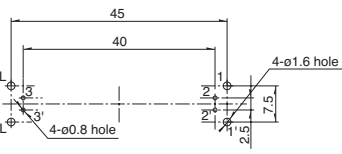
■ Dimensions

Unit:mm

| No. | Style | PC board mounting hole dimensions (Viewed from mounting side) |
|-----|-------|--|
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |

Dimensions

Unit:mm

| No. | Style | PC board mounting hole dimensions (Viewed from mounting side) | | | |
|-------|---|---|-----|-----|---|
| 9 | <div style="text-align: center;"> <table border="1" style="margin: 0 auto;"> <tr> <td style="padding: 2px;">L_1</td> <td style="padding: 2px;">4.5</td> <td style="padding: 2px;">9.5</td> </tr> </table>  </div> | L_1 | 4.5 | 9.5 |  <p style="text-align: center;">L : Lug terminal</p> |
| L_1 | 4.5 | 9.5 | | | |
| 10 |  |  <p style="text-align: center;">L : Lug terminal</p> | | | |
| 11 |  |  <p style="text-align: center;">L : Lug terminal</p> | | | |
| 12 |  |  <p style="text-align: center;">L : Lug terminal</p> | | | |

The length of Lever (L_1) can be customized. Refer to P.414 for details.

Rotary Potentiometers
 Slide Potentiometers
 General-use
 Mixer

Slim Slide™ (Slim 4) / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

Travel Distance Variety

| | | | |
|-------------|----|----|----|
| Travel (mm) | 15 | 20 | 30 |
|-------------|----|----|----|

Total Resistance Variety

| | | | | | | | |
|------------------------|---|----|----|----|-----|-----|-----|
| Total resistance (k Ω) | 5 | 10 | 20 | 50 | 100 | 200 | 250 |
|------------------------|---|----|----|----|-----|-----|-----|

Resistance Taper

| | | | |
|------------------|-----|----|----|
| Resistance taper | 15A | 1B | 3B |
|------------------|-----|----|----|

Note

Also compatible to DC (10V DC). (Excluding tapped types)

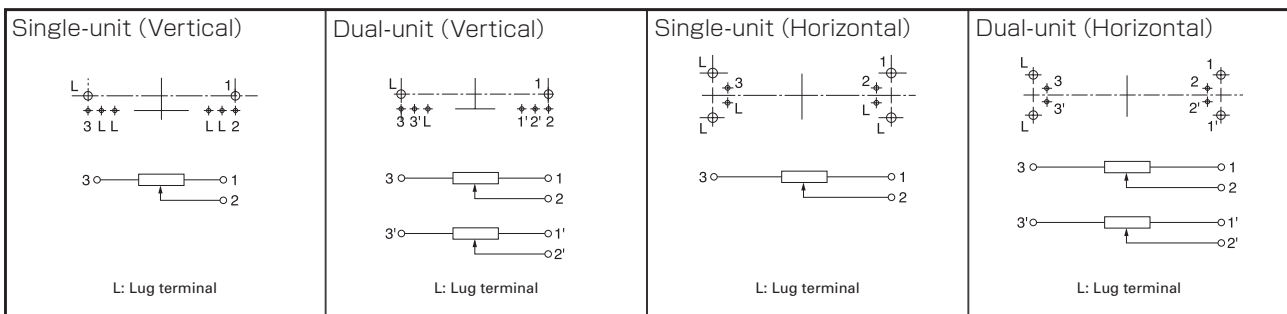
Rated Power

| Travel | Resistance taper | |
|--------|------------------|--------|
| | 15A | 1B, 3B |
| 15mm | 0.012W | 0.025W |
| 20mm | 0.025W | 0.05W |
| 30mm | 0.05W | 0.1W |

Maximum Operating Voltage

| Travel | Resistance taper | |
|--------|------------------|-----------------|
| | 15A | 1B, 3B |
| 15mm | 50V AC, 10V DC | 100V AC, 10V DC |
| 20mm | | |
| 30mm | 150V AC, 10V DC | 200V AC, 10V DC |

Terminal Layout / Circuit Diagram (Viewed from the Mounting Side)



Lever Types

| Configuration code | A | | C | | D | |
|-----------------------|------------|-----|------------|------|------------|------|
| | Dimensions | | Dimensions | | Dimensions | |
| Length L ₁ | 4.5 | 9.5 | 9.5 | 14.5 | 9.5 | 14.5 |

Corresponding Specification

| | |
|-----|--|
| Tap | Available, (Only the center-positioned) |
|-----|--|

Notes

- The color of the D-type lever is black. Please specify the required color for markers from red, green, orange and white.
- Marked are specifications recommended by Alps.

When ordering product varieties that are not listed, specify referring to the examples below.

Sample Part Number

R S 3 0 H 1 1 1 - A 0 9 5 - B 1 0 3

Travel (mm)
 15, 20, 30

Number of resistor elements

| | |
|-------------|---|
| Single-unit | 1 |
| Dual-unit | 2 |

Direction of lever and presence of center detent

| Code | Direction of lever | Center detent |
|------|--------------------|---------------|
| 1 | Vertical | Without |
| 3 | | With |
| A | Horizontal | Without |
| C | | With |

Lever types

| Code |
|------|
| A |
| C |
| D |

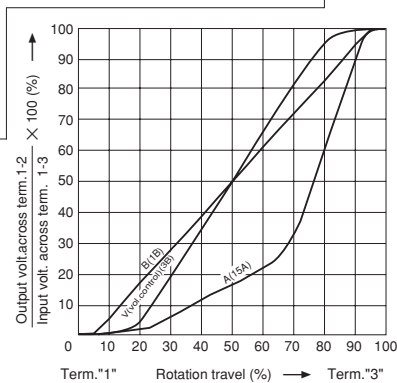
Length of lever

| Code | Length L ₁ (mm) |
|------|----------------------------|
| 045 | 4.5 |
| 095 | 9.5 |
| 145 | 14.5 |

Resistance taper

| Code | Resistance taper |
|------|------------------|
| A | 15A |
| B | 1B |
| V | 3B |

B: For tone & general V: For vol.



Total resistance










| Code | Total resistance (k Ω) | Code | Total resistance (k Ω) |
|------|------------------------|------|------------------------|
| 502 | 5 | 104 | 100 |
| 103 | 10 | 204 | 200 |
| 203 | 20 | 254 | 250 |
| 503 | 50 | — | — |

Note

Marked are specifications recommended by Alps.


Slide Potentiometers

List of Varieties

| Type | | Standard Type | | | Master Type | |
|------------------------------|------------------------------------|---|---|---|---|---|
| Series | | Super Slide™ | Slim Slide™ (Slim4) | | Compact Reflow Type | K Fader |
| | | RS □□ 1 | RS □□ H | | RS08U | RS □□ K |
| | | Single-unit/Dual-unit | Single-unit/Dual-unit | | Single-unit | Single-unit/Dual-unit |
| Photo | |  |  |  |  |  |
| Travel (mm) | | 15, 20, 30, 45, 60 | 15, 20, 30 | | 8 | 60, 100 |
| Direction of lever | | Vertical | | Horizontal | Vertical Horizontal | Vertical |
| Lever material | | Metal / Resin | Resin | | | Metal |
| Operating temperature range | | -25°C to +70°C | | | -10°C to +70°C | -10°C to +60°C |
| Operating life | | 15,000 cycles | 10,000 cycles | | | 100,000 cycles (Standard) 300,000 cycles (CP) |
| Available for automotive use | | ○ | — | — | — | — |
| Life cycle (availability) | |  |  | |  |  |
| Electrical performance | Total resistance (k Ω) | 10, 20, 50, 100, 200 | 5, 10, 20, 50, 100, 200, 250 | | 10 | 10, 50, 100 (Standard) 10 (CP) |
| | Resistance taper | 10A, 15A, 1B, 3B, 4B | 15A, 1B, 3B | | 1B | 15A, 1B |
| | Rated Power | Please see P.395 | Please see P.402 | | 0.025W | 0.25W |
| | Insulation resistance | 100MΩ min. 250V DC | Dual-unit: 100MΩ min. 250V DC | | 100MΩ min. 100V DC | 100MΩ min. 250V DC |
| | Voltage proof | 300V AC for 1 minute | Dual-unit: 300V AC for 1 minute | | 100V AC for 1 minute | 250V AC for 1 minute |
| | Center-taps | Without / With | | | Without | |
| Mechanical performance | Operating force | 0.3 to 2.5N | 0.6 ^{+0.5} _{-0.4} N | | 0.17±0.15N | Please see P.408 |
| | Center detent | Without / With | | | Without | |
| | Stopper strength | 50N | 30N | | 5N | 100N |
| | Lever push-pull strength | 50N | 30N | | 5N | 100N |
| | Lever wobble (mm) ※ Both sides | $\frac{2(2 \times L)}{20}$ | 1.6 max. | | — | $\frac{2(2 \times L)}{25}$ |
| | Detent slip-out force | Operating force + (0.2 to 2N) | Operating force +0.3 ^{+0.5} _{-0.25} N | | — | — |
| | Lever deviation (mm) ※ One side | 0.5 max. | — | — | — | 0.5 max. |
| Terminal style | | Insertion | | | Reflow | Lead (Standard) Connector (CP) |
| Page | | 401 | 410 | | 416 | 417 |

| | |
|---|-----|
| Slide Potentiometers Soldering Conditions | 438 |
| Potentiometer Cautions | 439 |
| Potentiometers Measurement and Test Methods | 441 |
| Potentiometers Resistance Taper | 443 |

Notes

- "L" in the "Lever Wobble" column of the above table indicates the length of lever.
- RS □□  □□ indicates travel.
- Indicates applicability to some products in the series.

Reference for Manual Soldering

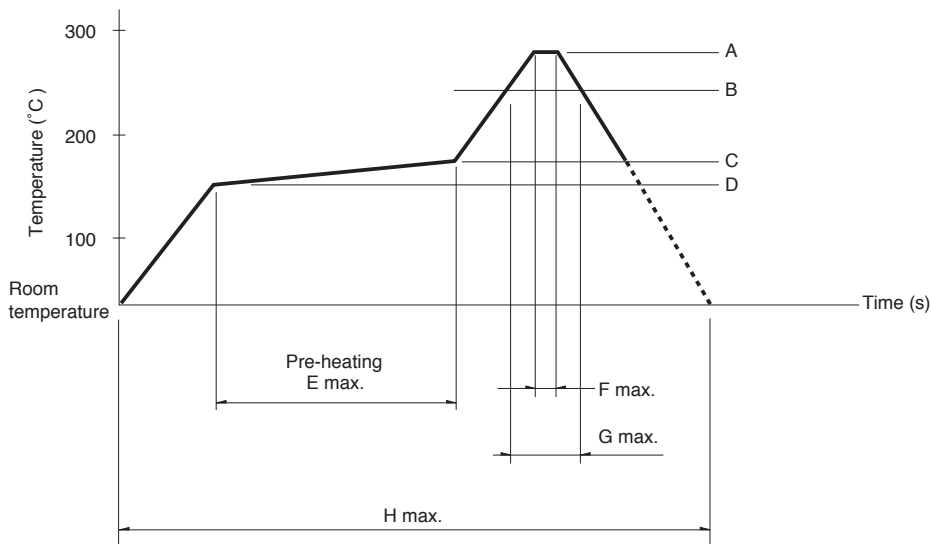
| Series | Tip temperature | Duration of Soldering time | No. of solders |
|---|-----------------|----------------------------|----------------|
| RS□□1, RS□□H, RS08U, RS□□K (Standard), RS□□N, RS□□N11S, RS6011□P, RS□□N1□M, RSA0K1□V (Motor terminal) | 350°C max. | 3s max. | 1 time |

Reference for Dip Soldering

| Series | Preheating | | Dip soldering | | Number of soldering |
|---|-------------------------------|--------------|-----------------------|----------------|---------------------|
| | Soldering surface temperature | Heating time | Soldering temperature | Soldering time | |
| RS□□1, RS□□H, RS□□N, RS□□N11S, RS6011□P, RS□□N1□M | 100°C max. | 1 min. max. | 260°C | 5s max. | 1 time |

Example of Reflow Soldering Condition

Temperature profile



| Series | A | B | C | D | E | F | G | H | No. of reflows |
|--------|-------|-------|-------|-------|--------|----|-----|--------|----------------|
| RS08U | 250°C | 200°C | 150°C | 150°C | 2 min. | 3s | 40s | 4 min. | 1 time |

Notes

1. When using an infrared reflow oven, solder may sometimes not be applied. Be sure to use a hot air reflow oven or a type that uses infrared rays in combination with hot air.
2. The temperatures given above are the maximum temperatures at the terminals of the potentiometer when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the potentiometer may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the potentiometer does not rise to 250°C or greater.
3. Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.